//Q 1 Take two integers and as input, you have to compute x/y .

//If x and y are not integers or if is zero , exception will occur

//and you have to report it.

//Read sample Input/Output to know what to report in case of exceptions.

package com.Assignments;

import java.util.Scanner;

public class Assignment4\_1 {

public static void main(String[] args) throws RaisingException {

try {

Scanner s=new Scanner(System.***in***);

System.***out***.print("Enter value of x: ");

int x=s.nextInt();

System.***out***.print("Enter value of y: ");

int y=s.nextInt();

if(x==0 && y==0) {

throw new RaisingException();

}

int z=x/y;

System.***out***.println("value of x/y: "+z);

}

catch (Exception e) {

System.***out***.println("error: "+e);;

}

}

}

package com.Assignments;

public class RaisingException extends Exception{

public RaisingException() {

System.***out***.println("error: x and y should not be zero.");

}

public static void main(String[] args) {

// **TODO** Auto-generated method stub

}

}

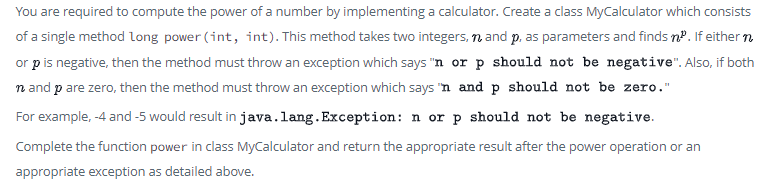
Enter value of x: 0

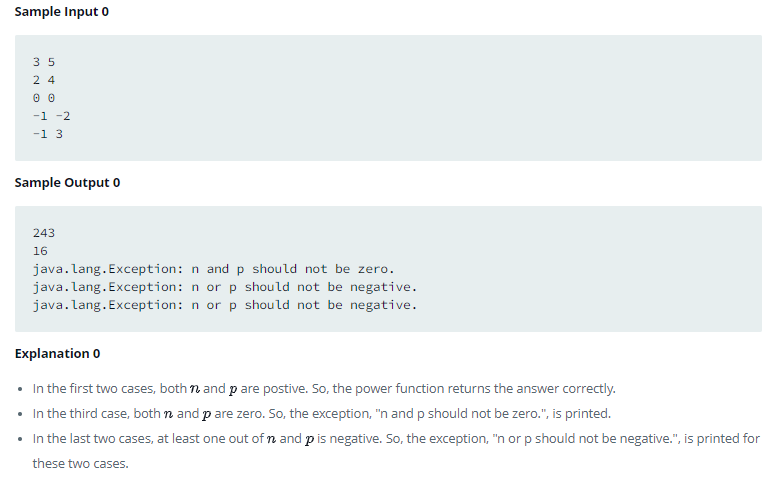
Enter value of y: 0

error: x and y should not be zero.

error: com.Assignments.RaisingException

Q 2)





package com.Assignments;

import java.util.Scanner;

class MyCalculator {

public static long power(int n, int p) throws Exception {

if (n < 0 || p < 0) {

throw new Exception("n or p should not be negative");

} else if (n == 0 && p == 0) {

throw new Exception("n and p should not be zero");

}

long result = 1;

for (int i = 1; i <= p; i++) {

result \*= n;

}

return result;

}

}

public class Assignment4\_2 {

public static void main(String[] args) {

Scanner s=new Scanner(System.***in***);

MyCalculator c = new MyCalculator();

System.***out***.print("enter n: ");

int n=s.nextInt();

System.***out***.print("Enter p: ");

int p=s.nextInt();

try {

long result = c.*power*(n, p);

System.***out***.println("Result: " + result);

} catch (Exception e) {

System.***out***.println(e);

}

}

}

enter n: -1

Enter p: -3

java.lang.Exception: n or p should not be negative

//Q 3 Write a program for user defined Exception that checks the external and

//internal marks if the internal marks is greater than 40 it raise the exception

//internal mark is exceed, if the external mark is greater than 60 exception is

//raised and display the message the external marks is exceed,

//create the above exception and use it in your program.

package com.Assignments;

import java.util.Scanner;

class marks{

void check(float i,float e)throws Exception {

if(i>40) {

throw new Exception("internal mark is exceed 40");

}

else if(e>60) {

throw new Exception("external marks is exceed 60");

}

else {

System.***out***.println("Total marks: "+(i+e));

}

}

}

public class Assignment4\_3 {

public static void main(String[] args) {

Scanner s=new Scanner(System.***in***);

marks m=new marks();

try {

System.***out***.print("enter internal marks: ");

float internal=s.nextFloat();

System.***out***.print("enter external marks: ");

float external=s.nextFloat();

m.check(internal, external);

}

catch (Exception e) {

System.***out***.println(""+e);

}

}

}

enter internal marks: 45

enter external marks: 62

java.lang.Exception: internal mark is exceed 40

//Q 4 Create a class Student with attributes roll no, name, age and course.

//Initialize values through parameterized constructor.

//If age of student is not in between 15 and 21 then generate user-defined

//exception “AgeNotWithinRangeException”.

//If name contains numbers or special symbols raise exception” NameNotValidException ”.

package com.Assignments;

import java.util.Scanner;

class Student{

Scanner s=new Scanner(System.***in***);

int rollNo;

String name;

int age;

String course;

Student(int rollNo,String name,int age,String course){

System.***out***.println("Enter rollNo: ");

rollNo=s.nextInt();

this.rollNo=rollNo;

System.***out***.println("Enter name: ");

name=s.next();

this.name=name;

System.***out***.println("Enter age: ");

age=s.nextInt();

this.age=age;

System.***out***.println("Enter course: ");

course=s.next();

this.course=course;

}

void display() {

System.***out***.println("rollNo: "+rollNo);

System.***out***.println("name: "+name);

System.***out***.println("age: "+age);

System.***out***.println("course: "+course);

}

void check(int age,String name) throws Exception{

if(age<=15 || age>=21) {

throw new Exception("AgeNotWithinRangeException");

}

if(name.matches("[a-zA-Z]+")) {

throw new Exception("ANameNotValidException");

}

}

}

public class Assignment4\_4 {

public static void main(String[] args){

try{

int rollNo = 0;

String name = null;

int age=0;

String course = null;

Student s1=new Student(rollNo,name,age,course);

System.***out***.println(s1.age);

s1.display();

s1.check(s1.age,s1.name);

}

catch(Exception e) {System.***out***.println(e);

}

}

}

Enter rollNo:

1

Enter name:

$

Enter age:

15

Enter course:

p

15

rollNo: 1

name: $

age: 15

course: p

java.lang.Exception: AgeNotWithinRangeException

Q 5 Write a program to check all the three number entered by command line argument are greater than 10 , then print sum of those numbers . If any number is less then 10 then throw user defined exception “MyException” which print message number is lesser then 10 “

//Q 5 Write a program to check all the three number entered by command line argument

//are greater than 10 , then print sum of those numbers . If any number is less then

//10 then throw user defined exception “MyException” which print message

//number is lesser then 10 “

package com.Assignments;

import java.util.Scanner;

class GreaterThan10{

Scanner s=new Scanner(System.***in***);

public int[] num;

void setData(float num[]){

for(int i=0;i<3;i++) {

System.***out***.println("Enter numbers" );

num[i]=s.nextFloat();

}

}

void sum(float num[]) {

float s=0;

for(float x:num) {

s+=x;

}

System.***out***.println("Sum is: "+s);

}

}

public class Assignment4\_5 {

public static void main(String[] args)throws RaisingException{

float num[]=new float[3];

GreaterThan10 g=new GreaterThan10();

try{

g.setData(num);

for(int i=0;i<3;i++) {

if(num[i]<10) {

throw new RaisingException(num[i]);

}

else {

}

}

g.sum(num);

}

catch(RaisingException e) {

System.***out***.println(e);

}

}

}

package com.Assignments;

public class RaisingException extends Exception{

public RaisingException() {

System.***out***.println("error: n and p should not be zero.");

}

public RaisingException(int p,int q) {

System.***out***.println("n or p should not be negative.");

}

public RaisingException(float n) {

System.***out***.println("number is lesser then 10");

}

}

Enter numbers

9

Enter numbers

10

Enter numbers

20

number is lesser then 10

com.Assignments.RaisingException

package com.Assignments;

public class Assignment4\_6 {

Assignment4\_6(){

this(10);

System.***out***.println("non parameterized constructor calling 1 parameter const");

}

Assignment4\_6(int x){

this(6,7);

System.***out***.println("non parameterized constructor calling 2 parameter const");

}

Assignment4\_6(int x,int y){

System.***out***.println(x\*y);

}

public static void main(String[] args) {

// **TODO** Auto-generated method stub

new Assignment4\_6();

}

}

42

non parameterized constructor calling 2 parameter const

non parameterized constructor calling 1 parameter const

//Q 7 Write a program that define interface Admission having abstract

//method registration Create another class Student in separate file

//having method Addstudent ()

//

//a)In Addstudent create local class Mtech student that inherits Admission interface

//b)In same method also create anonymous class that also inherits Admission interface

//In both above classes implement registration method

//

//In main call AddStudent method of student class.

package com.Assignments;

interface Admission{

default void registration() {

}

}

package com.Assignments;

import java.util.Scanner;

class Student1 implements Admission{

Scanner s=new Scanner(System.***in***);

String name;

public void registration() {

System.***out***.println("Student name: ");

name=s.next();

System.***out***.println("Student name is: "+name);

}

void AddStudent() {

//local class

class Mtech\_student implements Admission{

public void registration() {

System.***out***.println("Mtech Student name: ");

name=s.next();

System.***out***.println("Mtech Student name is: "+name);

}

}

Admission ms=new Mtech\_student();

ms.registration();

Object e= new Object()

{

public String toString() {return "Anonymous class";}

};

System.***out***.println(e.toString());

}

}

public class Assignment4\_7\_2 {

public static void main(String args[]) {

Student1 s1=new Student1();

s1.registration();

s1.AddStudent();

}

}

Student name:

om

Student name is: om

Mtech Student name:

mt

Mtech Student name is: mt

Anonymous class

// Q 8 Implement a Java program to read an integer from the user and

// calculate its square root. Handle the InputMismatchException

// if the user enters a non-integer value.

package com.Assignments;

import java.util.Scanner;

public class Assignment4\_8 {

void square(int x) {

int y=x\*x;

System.***out***.println("Square: "+y);

}

public static void main(String[] args) throws Exception{

Scanner s=new Scanner(System.***in***);

Assignment4\_8 a=new Assignment4\_8();

try {

System.***out***.println("enter integer: ");

int x=s.nextInt();

a.square(x);

}

catch(Exception e){System.***out***.println(e);}

}

}

enter integer:

h

java.util.InputMismatchException

//Q 9 Write a Java program to read an integer array from the user and calculate

//the average of its elements. Handle the InputMismatchException

//if the user enters a non-integer value.

package com.Assignments;

import java.util.Scanner;

class IntArray{

Scanner s=new Scanner(System.***in***);

void setData(int num[]){

for(int i=0;i<num.length;i++) {

System.***out***.println("Enter numbers" );

num[i]=s.nextInt();

}

}

void avg(int num[]) {

int s=0;

for(int x:num) {

s+=x;

}

double average=s/num.length;

System.***out***.println("Average is: "+average);

}

}

public class Assignment4\_9 {

public static void main(String[] args){

int num[]=new int[3];

IntArray I=new IntArray();

try{

I.setData(num);

I.avg(num);

}

catch(Exception e) {

System.***out***.println(e);

}

}

}

Enter numbers

9

Enter numbers

6

Enter numbers

2.6

java.util.InputMismatchException

//Q 10 Develop a Java program to read a string from the user and convert it

//into an integer. Handle the NumberFormatException if the string cannot

//be converted to an integer.

package com.Assignments;

import java.util.Scanner;

public class Assignment4\_10 {

void convert(String si) {

int stringInt=Integer.*valueOf*(si);

System.***out***.println("Converted to integer: "+stringInt);

}

public static void main(String[] args) {

Scanner s=new Scanner(System.***in***);

Assignment4\_10 a=new Assignment4\_10();

System.***out***.println("Enter string to be converted into Integer: ");

String input=s.next();

try {

a.convert(input);

}

catch(Exception e) {

System.***out***.println(e);

}

}

}

Enter string to be converted into Integer:

123ab

java.lang.NumberFormatException: For input string: "123ab"

//Q 11 You are tasked with implementing a Java program to manage bank accounts.

//Each bank account has an account number, balance, and account holder name.

//The program should support deposit, withdrawal, and balance inquiry operations.

//Input

//createAccount 123 John 1000

//deposit 123 500

//withdraw 123 200

//balance 123

//output

//Balance for account 123: 1300

package com.Assignments;

import java.util.Scanner;

class BankAccount1{

Scanner s=new Scanner(System.***in***);

static int *accountNumber*;

static String *name*;

static float *InitialbalanceAmount*;

static float *balanceAmount*;

void createAccount() {

System.***out***.println("Enter Account number of account holder: ");

*accountNumber*=s.nextInt();

System.***out***.println("Enter name of account holder: ");

*name*=s.next();

System.***out***.println("Enter initial balance: ");

*InitialbalanceAmount*=s.nextFloat();

}

void depositAmount() {

int choice=0;

System.***out***.println("Do you want to deposit(Enter 1 to deposit amount or other than 1 to exit): ");

choice=s.nextInt();

if(choice==1) {

System.***out***.println("Enter Amount to be deposited: ");

*balanceAmount*=s.nextFloat()+*InitialbalanceAmount*;

System.***out***.println("Balance Amount after deposit: "+*accountNumber*+" "+*balanceAmount*);

}

}

void withdrawAmount() {

int choice=0;

System.***out***.println("Do you want to withdraw (Enter 1 to withdraw amount or other than 1 to exit): ");

// System.out.println("Balance Amount after withdrawal: "+accountNumber+" "+balanceAmount);

choice=s.nextInt();

if(choice==1) {

System.***out***.println("Enter Amount to be withdrawn: ");

float withdraw=s.nextFloat();

if(withdraw<=*balanceAmount*) {

*balanceAmount*-=withdraw;

System.***out***.println("Balance Amount after withdrawal: "+*accountNumber*+" "+*balanceAmount*);

}

else {

System.***out***.println("You can not withdraw more than Balance Amount. ");

}

}

}

void accountDetailsDisplay() {

System.***out***.println("Account details of account holder: "+*accountNumber*+" "+*balanceAmount*);

}

}

public class Assignment4\_11 {

public static void main(String[] args) {

BankAccount1 b1= new BankAccount1();

b1.createAccount();

b1.depositAmount();

b1.withdrawAmount();

b1.accountDetailsDisplay();

}

}

Enter Account number of account holder:

123

Enter name of account holder:

john

Enter initial balance:

1000

Do you want to deposit(Enter 1 to deposit amount or other than 1 to exit):

1

Enter Amount to be deposited:

500

Balance Amount after deposit: 123 1500.0

Do you want to withdraw (Enter 1 to withdraw amount or other than 1 to exit):

1

Enter Amount to be withdrawn:

200

Balance Amount after withdrawal: 123 1300.0

Account details of account holder: 123 1300.0